

EXHIBIT C
EXPERT MEDICAL REPORT
DATED NOV. 20, 2018
BY
HEIDI B. MILLER, M.D.

AFFIDAVIT OF HEIDI B. MILLER, M.D.

STATE OF MISSOURI

CITY OF ST. LOUIS

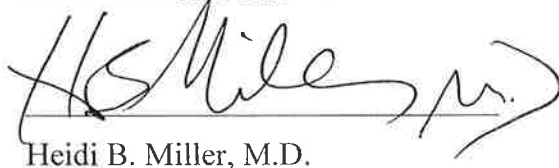
I, Heidi B. Miller, M.D., hereby affirm the following:

1. I am a board-certified internal-medicine physician in active practice for 15 years. I graduated from Harvard Medical School in 2000 and completed my residency in internal medicine at Harvard's Brigham and Women's Hospital in 2003.
2. Since completing my residency in 2003, I have maintained a medical practice at a community health center in Saint Louis, Missouri where I do primary and urgent care for a patient population with high complexity and multi-morbidity.
3. I have been continuously Board-Certified by the American Board of Internal Medicine. I have never had any certification, licensure, or credentialing interrupted or withdrawn for any reason.
4. I serve as a Faculty Instructor in Clinical Medicine for the Internal Medicine Department of Washington University School of Medicine, where I have taught medical students and residents for 15 years.
5. I have been invited across the country to give grand rounds and keynote speeches on multiple medical topics. In addition, I have worked as a Medical Consultant to multiple nonprofit healthcare organizations in Missouri on health quality initiatives.
6. I have been invited multiple times to testify to Missouri legislative committees on healthcare policy bills. I was selected by the Missouri Governor to serve on the Medicaid Oversight Committee, by the Director of the Missouri Department of Social Services to serve on the Opioid Policy Action Committee, by the National Association of Community Health Centers as the Health Care Provider of the month, and by the Missouri Foundation for Health to help develop the patient-centered medical home model in the state of Missouri.
7. I have additional expertise in Trauma-Informed Care for medical personnel and have subsequently been invited to deliver over a dozen Keynote and Grand Round talks to hundreds of doctors in Missouri, Kansas, and Illinois about how traumatic illnesses impact physical and mental health. Most recently in 2018, the federal agency SAMHSA (Substance


Abuse and Mental Health Services Administration) invited me to present their first nation-wide webinar on introducing trauma-informed care into primary care general medicine.

8. Attached to this affidavit and designated as Exhibit A, hereto, is a true and accurate copy of my curriculum vitae which provides a comprehensive listing of my educational and academic background, post-graduate medical training, teaching experience, employment history as a medical resident and medical doctor, medical licensures, board certifications and DEA certifications, research conducted and publications, lectures and expert panel presentations, legislative health advocacy testimony, professional committees and boards, as well as honors and awards and other achievements.
9. I have been retained as a medical expert by the legal counsel for Mr. Charles James Atcitty, of Mesa, Arizona in his medical malpractice claims against the Indian Health Service Kayenta Health Center and the doctors who encountered Mr. Atcitty from July 6, 2016 through September 6, 2018.
10. I have reviewed the medical records provided to me for Mr. Atcitty, from August 24, 2015 to June 3, 2018, from the Kayenta Health Center, Phoenix Indian Medical Center, Banner University Medical Center, Banner Good Samaritan Medical Center, and Montecito Post-Acute Care facility.
11. Attached to this affidavit and designated as Exhibit B, hereto, is a true and accurate copy of my medical expert report and opinion regarding Mr. Atcitty's medical encounters at the Kayenta Health Center on July 6, 2016, July 11, 2016, August 1, 2016 and September 6, 2016, and the resulting surgeries he endured and chronic diseases and ailments he now has.
12. The medical opinions expressed in the attached report are based on a reasonable degree of medical and scientific certainty based on my education, training and experience, as well as peer-reviewed medical treatises and journals that are trusted sources of information routinely relied upon by medical experts evaluating and forming opinions on medical conditions and medical care.

FURTHER AFFIANT SAYETH NAUGHT


Heidi B. Miller, M.D.

The foregoing Affidavit was acknowledged before me, an officer duly authorized in the State and County aforesaid, to take acknowledgement, this 20 day of November in the year 2018, by Heidi B. Miller, M.D., who is personally known to me or has produced MO Driver's License as identification.

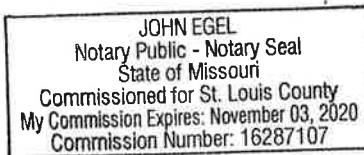
Signature: 

Printed name of notary: John Egel

Notary Public, State of Missouri.

My commission expires: ~~FF~~

11/03/2020



MEDICAL EXPERT REPORT

CASE:

MR. CHARLES JAMES ATCITY

BY:

HEIDI B. MILLER, M.D.

NOVEMBER 20, 2018

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I. DR. MILLER'S CREDENTIALS

I, Heidi B. Miller, M.D., am a board-certified internal-medicine physician in active practice for 15 years. I graduated from Harvard Medical School in 2000 and completed my residency in internal medicine at Harvard's Brigham and Women's Hospital in 2003. Since then, I have maintained a medical practice at a community health center in Saint Louis, MO where I do primary and urgent care for a patient population with high complexity and multi-morbidity. I have been continuously Board-Certified by the American Board of Internal Medicine. I have never had any certification, licensure, or credentialing interrupted or withdrawn for any reason. I was nationally recognized in 2008 as the Health Care Provider of the Month by the National Association of Community Health Centers.

I serve as a Faculty Instructor in Clinical Medicine for the Internal Medicine Department of Washington University School of Medicine, where I have taught medical students and residents for 15 years. I have received the annual Distinguished Service Teaching Award from this medical school four times in the past five years, and I was awarded their inaugural Gold Humanism Honor Society professor in 2015. I have been invited across the country to give grand rounds and keynote speeches on multiple medical topics. I have additional expertise in Trauma-Informed Care for medical personnel and have subsequently been invited to deliver over a dozen Keynote and Grand Round talks to hundreds of doctors in Missouri, Kansas, and Illinois about how traumatic illnesses impact physical and mental health. Most recently in 2018, the federal agency SAMHSA (Substance Abuse and Mental Health Services Administration), in the U.S. Department of Health and Human Services, invited me to present their first nation-wide webinar on introducing trauma-informed care into primary care general medicine.

I also contract as the Physician Medical Consultant to enhance health quality for five separate regional nonprofit healthcare organizations in St. Louis and one statewide Missouri nonprofit healthcare organization. In this realm I provide expertise in the full continuum of healthcare, as well as transitions of care, for which I have chaired the multidisciplinary regional Transitions of Care Task Force for the past eight years. I have been invited multiple times to testify before

Missouri legislative committees on healthcare policy bills. I was selected by the Missouri Governor to serve on the Medicaid Oversight Committee, by the Director of the Missouri Department of Social Services to serve on the Opioid Policy Action Committee, and by the Missouri Foundation for Health to help develop the patient-centered medical home model in the state of Missouri.

II. CHARTS & RECORDS REVIEW

I have reviewed the medical records provided to me for Mr. Charles James Atcitty of Arizona, from 8/24/2015 to 6/3/2018, from Kayenta Health Center, Phoenix Indian Medical Center, Banner University Medical Center (BUMC), Banner Good Samaritan Medical Center and Montecito Post Acute Care. My review and medical opinion on this case are based on these records. I have never met any of Mr. Atcitty's providers in the chart. If any new information or documents are provided, I may have additions/revisions to the opinions included below. All designations below as "Mr. Atcitty" or "patient" refer to Mr. Charles James Atcitty.

III. PATIENT'S PRESENTATION AND MEDICAL MANAGEMENT AT KHC PRIOR TO HOSPITALIZATION ON SEPTEMBER 24, 2016

Mr. Atcitty was in his usual functional state of health until he developed severe back pain in July 2016. He subsequently had 4 encounters with the Kayenta Health Center (KHC) before he was finally admitted to the hospital at BUMC on 9/24/2016 for full evaluation and treatment. The medical/surgical care provided to him from 9/24/2016 onward was appropriate, meeting all professional standards of care, ultimately saving his life despite his dire ultimate outcome. Prior to his hospitalization, the preceding 4 encounters with KHC significantly breached the national standard care, as detailed below.

A. First KHC Encounter: JULY 6, 2016 EMERGENCY DEPARTMENT

Mr. Atcitty's initial presentation for back pain occurred in the Kayenta Health Center Emergency Department. Patient reported lower back pain, discomfort with urination, and frequent urination. Workup was limited to 1) vital signs, 2) urine test (urinalysis), and 3) glucose fingerstick. The diagnostic assessment was "Dysuria" (painful urination) and "Uncontrolled DM [diabetes]." The management consisted solely of an instruction, "Drink plenty of fluid to be your medication for DM."

This limited inadequate evaluation breached the national standard of care via:

1. Failure to fully investigate Mr. Atcitty's complaints.

The following minimal evaluations were missing:

- a. An adequate patient history.
 - i. The pain assessment is incomplete, with multiple blank answers.
 - ii. The doctor neglected to ask the following fundamental questions necessary to evaluate back pain:
 1. Any prior history of back pain or urinary problems?
 2. Any preceding injury or strain before the onset of symptoms? (Future Neurosurgery consult note from 9/26/18 page 234 of 480 BUMC collected this appropriate history, "His lower back pain started early July 2016 without any specific injury or falls.")
 3. Any over-the-counter medications used to try to alleviate the symptoms? (Patient was taking Aleve over-the-counter five times per day. This class of drugs, non-steroidal anti-inflammatory drugs (NSAIDS), can blunt both pain and fever. It is the standard of care to ask about these over-the-counter medications, as they can mask the presentation of disease if the provider does not know they are in the patient's system.)
 4. Any red-flag symptoms of weakness, numbness, or bowel or bladder incontinence? (Future Infectious Disease consult note from 9/30/16 page 242 of 480 BUMC collected this appropriate history in his HPI,

"pain became so severe... that he had trouble walking and also some urinary incontinence.")

b. A physical exam.

Other than vital signs in the nurse's note, there is no evidence that the doctor laid hands on the patient to perform any physical exam. New onset back pain requires a physical exam.

c. Appropriate diagnostic testing.

i. The urinalysis performed revealed 3 abnormalities in his urine: (1) high sugar, (2) blood, and (3) protein. The provider recognized that the high sugar was abnormal, but neglected to further evaluate the other abnormal findings. Although the protein may be a chronic non-urgent issue associated with his diabetes, the blood is an urgent issue for a patient with new onset back pain.

ii. For blood in the urine, in the setting of back pain, the longstanding standard of care is at minimum to order the following tests:

1. Urine culture (to rule out infection).

2. X-ray and/or ultrasound of the kidneys (to rule out a kidney stone).

In addition, the patient reported difficult painful frequent urination. These are common findings in infection and/or kidney stones, all the more reason to order these additional tests. I understand from the future KHC Emergency Department encounters that that the doctor indeed had access to these tests in that location.

2. Failure to make an accurate assessment of patient's current medical state.

The diagnostic workup was inappropriately limited, as detailed above. Even so, with the limited information available, the provider still did not make an accurate assessment, as follows:

a. The data available from that encounter indicate that the patient had:

i. New onset back pain, of unclear etiology.

ii. Diabetes, uncontrolled.

It is the standard of care to evaluate the current state of diabetes via testing of sugar in the blood (glucose was moderately elevated), not the urine (glucose was highly elevated). It is considered outdated to focus on the urine glucose levels, because this can vary depending on kidney function. The doctor calling out the urine glucose raises concern for out of date diabetes standards of care.

- iii. Multiple urinary complaints: pain with urination, frequent urination, and urinary urgency (i.e. difficulty holding urine before making it to the bathroom). The "uncontrolled diabetes" only accounts for the frequent urination; it does not account for the pain with urination or urgency.
 - iv. Rule out infection. Patient reported the urinary complaints listed above, nurse noted patient had "dysuria with chills", the vital signs showed an elevated respiratory rate 24 (normal range is 12-20), and urinalysis showed blood, all of which are independently and more compellingly in combination suggestive of infection.
 - v. Blood in the urine. This is a significant finding. The etiology always has to be determined. If not related to infection, then other acute causes need to be ruled out.
- b. Despite the items apparent by the chart, listed above, the doctor's assessment was limited to only:
- i. "Dysuria"
This means painful urination. It is a symptom stemming from multiple possible etiologies; it is not a diagnosis. It requires an investigation to figure out what is causing the painful urination. It is also completely unrelated to the diagnosis of diabetes. Elevated sugar in the urine does not cause painful urination.
 - ii. "Uncontrolled DM [diabetes]"
This has nothing to do with the patient's chief complaint of back pain. Diabetes does not present as back pain or cause back pain.

3. Failure to provide adequate treatment.

- a. Both the diagnostic workup and assessment were inappropriately limited as detailed above. Even so, with the limited assessment provided, the provider still did not provide adequate treatment. (Even the next provider at the next ED visit on 7/11/16 noted that patient "was seen in ER on 7/6/16 but was not given medication.") The following shows the failure to provide adequate treatment:
 - i. For "Dysuria," the provider gave no treatment. And the provider's recommendation to "drink plenty of fluid" for his diabetes is not a treatment for dysuria.
 - ii. For "Uncontrolled DM," the recommendation to "drink plenty of fluid to be your medication for DM" is not a treatment. Diabetes medicine is a treatment for diabetes. Water, although needed to prevent dehydration, is not a treatment for diabetes.

Further diagnosis and evaluation was required to make an appropriate diagnosis of this patient's problem, and no further diagnostic testing was done.

- b. Likewise, without proper evaluation and accurate assessment, the additional vitally needed treatment for his brewing infection with appropriate antibiotics was not done.
- c. Instead of taking the patient's chief complaint of new back pain seriously, the doctor admonishes, "I recommend to the patient to take his diabetes seriously."

4. Delay in ultimate correct diagnosis and treatment.

Due to the aforementioned breaches of national standard, the infection growing in Mr. Atcitty's body was allowed to progress further. Every day that a bacterial infection is not treated with antibiotics causes significant rapid further damage.

B. Second KHC Encounter: July 11, 2016 EMERGENCY DEPARTMENT

Mr. Atcitty returned to the KHC Emergency Department 5 days later reporting worsening symptoms. The evaluation of this visit did include a history, physical exam, blood work, urine, an

x-ray of the abdomen, ultrasound of the abdomen, and phone consultation with a urology expert.

Findings from this visit include:

- Worsening back pain, with new abdominal pain and new right shoulder pain.
- Increased respiratory rate to 32 on initial presentation and then up to 35 later in the visit (up from 24 on 7/6/16 in ED; normal is 12-20).
- Increased blood pressure 180/98 (from 139/87 on 7/6/16 in ED; normal is less than 140/90), and he never had a history of hypertension.
- Increased pain scale increased to 7 out of 10 on presentation to the ED (from 4 out of 10 on 7/6/17 in ED).
- Multiple significant lab abnormalities were detected:
 - Anemia (HCT 38.1) - This was new.
 - Elevated white blood cells (This is a sign of increased inflammation and/or infection. WBC 14.79. There was also what we call a left-shift in the distribution of white blood cell subtypes, including elevated neutrophils 83.6% which is a common indicator of acute bacterial infection). This was new.
 - Abnormal liver test (which is a sign of liver inflammation or blockage of bile. Alkaline phosphatase 135). This was new.
 - Three major electrolyte disturbances: decreased calcium electrolyte (calcium 7.8), decreased potassium electrolyte (potassium 3.4), decreased sodium electrolyte (sodium 127). This was new.
 - Elevated sugar (glucose 285). This was seen previously. Likely a chronic issue with his diabetes.
 - Blood in his urine. This was increased to "large" from previous 7/6/17 ED visit where it was listed as "moderate."
 - Protein in his urine. This was seen previously. Likely a chronic issue with his diabetes.
- The x-ray of the abdomen and the ultrasound of the abdomen were within normal limits.

- Conversation for consultation with a specialist urologist over the phone, "Case discussed with Dr. Badger (urology ar [sic] FMC). Pt [patient] will be put on Cipro [antibiotic] 500mg BID for 10 days."

By the end of this visit, the provider discharged the patient home with prescriptions for an antibiotic and two opioid pain medications, referral to urology specialist, and instructions to return if needed.

This second evaluation breached the national standard of care via:

1. Failure to document and make an adequate assessment of patient's current medical state.

The work-up described above for this 7/11/2018 visit yielded many emergent abnormal findings. The doctor lists only a limited subset of these findings "flank pain bilateral, blood in urine, dysuria, and shoulder pain." In addition to the items listed above, the most significant assessment missing is the following:

- a. Diagnosis of "Infection".
- b. Initial location of infection (e.g., bladder? urethra? kidney? bone? blood? heart? skin?).
- c. Potential/possible organism causing infection (e.g. bacteria? type? other?).

The ED provider and urologist presumed some type of infection, based on the prescription of an antibiotic (ciprofloxacin); this medication is not indicated for any medical condition other than infection. The ED doctor also acknowledged, "WBC count is elevated at 14.8 with a left shift," which is a classic finding for a serious bacterial infection. Since the urologist specializes in urine problems, and since ciprofloxacin is one of the most commonly used antibiotics for genitourinary tract infections, perhaps this was prescribed to address a presumed urine infection. However, the urine sample did not show classic findings of infection, as acknowledged by the ED provider, "UA is negative for infection but the [sic] is a large amount of blood, rare bacteria, no real sign of infection." (Although the chart lacked this essential documentation and at least a differential diagnosis of "infection," the chart did note, "menstrual history: regular," even though "patient is male.")

2. Failure to complete the evaluation.

Because this visit included seemingly contradictory signs and symptoms of infection without a urinalysis indicating that the urine as the source of infection, the national standard of care would have been to proceed with two additional tests that could have been ordered during this ED encounter:

- a. Urine culture.
- b. Blood cultures.

Although these cultures take a couple days to be resulted, they are indisputably the standard of care in this situation. In addition it is essential and internationally expected to *sequence the cultures before starting any antibiotics*. Proper infectious disease treatment requires accurate targeting of the antibiotic to the individual causative organism whenever possible. The way to do this is to take cultures before adding antibiotics that can later mask any efforts to accurately culture tissue.

- c. Abdominal CT.

It would be standard care to order an abdominal CT scan at this point, which would have revealed his brewing infection.

- d. Hospitalization.

Because of the multitude of new urgent findings affecting multiple organ systems, with three alarming major electrolyte abnormalities, without a clear diagnosis, it would have been the standard of care to admit the patient to the hospital for evaluation and treatment. He had new concerning findings affecting the musculoskeletal system, the neurologic system, the circulatory system, the endocrine system, the hematologic system, the renal system, the pulmonary system, and the genitourinary system.

3. Failure to provide proper treatment.

- a. An infection was suspected, and an antibiotic was prescribed. This treatment breached the national standard care in the following ways:
 - i. If there is uncertainty about the cause/location/source of an infection, it is essential to search for this source before considering therapy. This is

especially essential to sequence the cultures *before* starting any antibiotic.

- ii. Because there was insufficient work-up for the source of infection, the antibiotic selected was the wrong choice, the wrong dose, and the wrong duration. It is harmful to use the wrong antibiotic, as it can mask an infection, delay diagnosis, and keep the infection brewing and spreading before the real etiology and extent of infection is determined.
- b. The pain treatment of two opioid prescriptions was inappropriate for two reasons:
 - i. By the standards in 2016 (and today), it is inappropriate to give two opioid prescriptions: Percocet and Tramadol. Even if dosed at different times, these medications can dangerously interact, risking opioid toxicity.
 - ii. Such excessive prescriptions of narcotics can mask the pain response excessively to the point that the patient loses the alert sign from his body that he is getting sicker and needs to return to hospital immediately.
- c. Again, due to the sheer volume and variety of new multi-system organ involvement, it would have been the standard of care to admit the patient to the hospital for evaluation and treatment designed according to an inpatient evaluation.

4. Delay in ultimate correct diagnosis and treatment.

Due to the missed cultures, missed diagnosis, and improper antibiotic prescribing, the infection growing in his body was allowed to progress further. Every day that a bacterial infection is not properly treated and eradicated causes significant rapid further damage.

C. Third KHC Encounter: August 1, 2016 General Medicine

Mr. Atcitty presented to an outpatient clinic appointment on 8/1/2016 with persistent back pain but was struggling to go back to work. The provider notes that patient had "severa [sic] low back and flank pain, was treated with Cipro and is taking Ibuprofen 600mg on his own since then."

This third evaluation breached the national standard of care via:

1. Failure to make an adequate assessment of patient's medical state.

There were 3 key missing elements regarding the patient's assessment.

- a. This note acknowledges that the patient was recently treated in the ED for "low back and flank pain" with an antibiotic, "Cipro." Again, an antibiotic is a treatment for an infection; an antibiotic is not the way to treat back pain. There is no mention of the word "infection" nor which type of infection this particular antibiotic was supposedly targeting. And even if the exact source or exact causative organism is not known, it is standard practice to at least list the possibilities via a differential diagnosis. The absence of the word infection reflects a lack of clarity or understanding of what was being treated.
- b. If Cipro was purportedly prescribed to address the back/flank pain, then the back/flank pain would be expected to resolve upon completing the 10-day course of antibiotics. The patient is presenting 21 days after the Cipro was started (from ED visit on 7/11/2017), with persistent and still -unexplained back pain, so much so that he is taking a high dose of ibuprofen twice a day. The discordance between the treatment approach (Cipro prescription) and the persistence of symptoms (requiring self medication with an anti-inflammatory pain medicine) should have raised questions leading to further investigation.
- c. The patient presented with an extremely high blood pressure 174/76 (normal is less than 140/90), with no history of hypertension. The doctor neglected to recognize that this new hypertensive urgency, reflective of new systemic heart disease, especially in the context of so many new multi-organic system

abnormalities, required additional evaluation. Missing the significance of this allowed his underlying system disease to progress.

2. Failure to adequately investigate the cause of patient's symptoms

There remain three unanswered questions in the work-up that were not investigated:

- a. The patient's back pain persisted, while on a high dose ibuprofen pain reliever, despite completing the prescribed course of the Cipro antibiotic. This should have raised a question about the etiology of and initial assumptions regarding the patient's symptoms, leading to the following obligatory evaluation:
 - i) Urinalysis and urine culture - to reassess for kidney/urinary infection or kidney stone.
 - ii) If the urine testing was unrevealing, then the next immediate step would be to proceed with radiologic testing (either a CT scan of the abdomen and retroperitoneum or MRI of the lumbar spine).
- b. Although the provider includes the following visit diagnoses in her assessment, "Acute low back pain, elevated blood-pressure, heart murmur, hypocalcemia, hypokalemia, hyponatremia, obesity, and type 2 diabetes," there is no acknowledgement of the marked cluster of new multi-organ system problems. A patient with new acute back pain, new blood pressure elevation, a new murmur, and three new major systemic electrolyte disturbances (low calcium, low potassium, low sodium) requires a systemic review of his health status. His new symptoms affected the musculoskeletal system, the circulatory system, the endocrine system, and metabolism. Such vast multisystem involvement requires a more comprehensive evaluation as noted above, as well as very close follow-up.
- c. What happened with the referral requests?
 - i) There is no mention, query, scheduling, or confirmation of the urology consult ordered during the previous ED visit.
 - ii) The "referral to echocardiogram" is missing a timeline urgency notation or triage level.
 - An "echocardiogram" is a diagnostic ultrasound test to evaluate the structure, function, and valve integrity of the heart.

- The doctor ordered this test to evaluate the new murmur.
- It is alarming for a new murmur to be detected within a 21-day time frame.
 - The previous ED physical exam on 7/11/2016 by the doctor noted: "No murmurs."
 - This current visit physical exam on 8/1/2016 by the doctor noted: "Aortic/Pulmonary/Tricuspid heart murmur."
- The national standard of care was breached in two ways, with regard to this echocardiogram referral:
 - Given the rapid onset of a new murmur, in combination with multiple other systemic multi-organ abnormalities, the echocardiogram should have been done the same day or the next day. And if this was impossible with current outpatient resources, then the patient would need to be hospitalized and have the echocardiogram done in the hospital.
 - In general, because the timeline of referrals can vary so vastly from same-day arrangements to scheduling several months in the future, it is standard practice to designate every referral with a level of time urgency. A routine referral could take many months to schedule, unless there is a specific request that it be immediate, often labeled as "ASAP" or "stat" or "triage level 1." Without this urgent designation, whatever abruptly caused his new heart murmur would be allowed to progress for months. In fact, there is no mention in the chart at all if the echocardiogram was ever scheduled.

3. Inappropriate disposition leading to exacerbation of underlying condition.

Instead of investigating and treating the issues listed above, the patient was discharged home and released to work, "Can resume normal activity at work or school on 7/14/2016." The combination of (1) missing the diagnosis and opportunity to provide early treatment,

and (2) having the patient walk, sit, live, and work with a progressively disintegrating infected spinal vertebra synergistically exacerbated his condition.

4. Delay in ultimate correct diagnosis and treatment.

Due to the missing elements of the assessment and investigation, as outlined above, the infection growing in Mr. Atcitty's body was allowed to progress further. Every day that a bacterial infection goes untreated, results in progression of damage and spread of the bacterial to additional organ systems.

D. Fourth KHC Encounter: September 6, 2016 EMERGENCY DEPARTMENT

This was Mr. Atcitty's last visit to the ED at KHC prior to his ultimate hospitalization at BUMC on 9/24/2016. Notable findings include: persistent back pain, to pain scale level 6 out of 10, difficulty urinating, new leg swelling. The 9/6/2016 report states, "Patient describes pain as stabbing." Without any prior history of high hypertension, his blood pressure registered extremely high at 176/76 (normal is less than 140/90), and his vital signs reflected unintentional weight loss of 9 lbs. since his initial presentation on 7/6/16.

The doctor's assessment was limited to: "diabetes well controlled, hypokalemia, hyponatremia [low sodium electrolyte], prostatic obstruction, chf [congestive heart failure], anemia not iron deficient, unexplained hyperbilirubinemia [abnormal liver test], suspect prostatic cancer with mets [metastasis]." Patient was discharged with a prescription for ibuprofen for pain, recommendation to follow up with primary care provider, and a request for consult with urology without any time-line or triage urgency level for this referral. Patient was unable to walk out of the ED, as noted "Patient left by: Wheelchair."

This was the fourth KHC encounter to breach the national standard of care via:

1. Further failure to adequately evaluate and diagnose his condition.

The patient's status was again not adequately investigated in the following ways.

- a. Hospital evaluation:

It is alarming that this otherwise functioning working man could not walk out of this ED. At this point, it would have been the standard of care to admit him to the hospital for additional evaluation and treatment.

b. Radiology testing:

With this fourth visit of extreme unexplained pain, he absolutely should have received a CT SCAN at this ED visit. This would have made the diagnosis of his infection and spinal involvement sooner.

c. Specialty referral:

Although it states that he was "referred to urologist, talked to Dr. Merino who will follow him this week," there is no record that this appointment was scheduled or made. The next medical encounter was at PIMC when he presented progressively ill on 9/24/2016 at which point he was finally sent to BUMC and hospitalized there. In the end he needed multiple specialty referrals to save his life (infectious disease, cardiology, neurosurgery), and it was shortsighted by KHC to limit the referral request to urology. Even the future hospital note from 9/25/2016 (page 269 or 480) notes, "He visited the Kayenta ED 3 more times over the past 3 months ... told most recently that he had HF [heart failure], for which he was referred to cardiology but has not yet been seen (no ECHO to his knowledge). He was also referred to a urologist, which he has not yet seen."

d. Physician assessment:

The multiplicity of medical findings from differing organ systems demands consideration of an immediate life-threatening systemic disease. The new findings are alarming and cannot be explained by their presumption of prostate cancer. The abundance of symptoms and signs, stemming from multiple organ systems, with a progressively deteriorating trajectory is exactly how a systemic life-threatening disease presents, such as the disseminated infection that eventually became fulminant when he was hospitalized on 9/24/2016. With multi-organ system involvement like this, with four recent outpatient visits yielding no definitive explanation, as noted above, it is standard practice to admit a patient for evaluation. The patient should have been hospitalized at this point for further assessment and immediate treatment as indicated.

2. Further delay in treatment leading to progressive permanent damage to multiple organ systems.

Because the patient was not correctly diagnosed or treated again, the infection in his body was allowed to grow, spread, and destroy tissues over another 18 days unfettered, as outlined in section IV below. Although the doctor noted at discharge, "CONDITION ON RELEASE: worrisome," instead of hospitalizing him for further evaluation, "Patient left by: Wheelchair.... Discharge to home."

IV. EFFECTS OF KHC'S MISDIAGNOSIS & FAILURE TO DIAGNOSE & TREAT PATIENT'S SYSTEMIC INFECTION

Subsequent to KHC's misdiagnosis & failure to diagnose and treat the systemic infection afflicting Mr. Atcitty, discussed above, the hospital records starting September 24, 2016 indicate that the patient endured the following:

- A. ***Infection of Mr. Atcitty's entire body.*** This is "sepsis" - a severe diffuse potentially lethal systemic infection, in his case due to the bacteria called "group B strep."
- B. ***Infection of Mr. Atcitty's heart.*** This is called "endocarditis" - a life-threatening infection of the inner heart and heart valves, due to weed-like growth of bacterial masses, called "vegetations," that disrupt the structure and function of the heart. In his case, the vegetations destroyed his aortic valve (causing severe back flow of blood due to aortic insufficiency) and invaded the basal portion of the septum between the main chambers. Altogether this invasive infection caused permanent heart failure, only partially and temporarily remediated by aortic valve surgery. The pumping function of the heart is permanently damaged, and the valve will need to be replaced through a major life-threatening surgical procedure every ten years.
- C. ***Infection of Mr. Atcitty's spine.*** Osteomyelitis and diskitis (infection of the L1 vertebral bone causing "complete destruction and collapse of the L2 vertebral body," the L2 vertebral bone, and the L1-L2 disc in between those two vertebra) noted on MRI 9/26/16.

D. ***Infection of the muscles in Mr. Atcitty's back.*** Multiple abscesses of psoas muscles, requiring interventional drains.

E. ***As a result, Mr. Atcitty underwent 4 major surgeries:***

1. 10/3/2016 Heart surgery: aortic valve replacement, and resection of L ventricular endocarditis.
2. 10/10/2016 Neurosurgery from posterior aspect of spine: L1-L2 decompressive laminectomies, T11-L4 fusion posterolateral arthrodesis, use of posterior instrumentation at T11, T12, L3, and L4, use of autograft, use of allograft morselized, use of intraoperative CT and stereotactic navigation for instrumentation.
3. 10/12/2016 Neurosurgery through the abdomen: T12-L1, L1-L2, and L2-L3 anterior lumbar discectomies, L and L2 corpectomies, T11 through L3 anterior interbody fusion arthrodesis, use of interbody devices from T11 through L3, T12 through L3 anterior interbody arthrodesis, use of interbody device from T12 through L3, use of anterior instrumentation from T11 through L3, use of autograft, use of allograft morselized, use of intraoperative fluoroscopy.
4. 10/12/2016 Neurosurgery through retroperitoneum: Left retroperitoneal exposure of vertebral body T12, L1, L2, L3; takedown and repair of left hemidiaphragm, insertion of pleural chest tube.

F. ***Mr. Atcitty also underwent multiple invasive interventions.*** All of these were necessary to save his life, but are intrusive and painful, including but not limited to:

1. Left heart catheterization 9/26/2016. (This is a large bore needle and long flexible tube placed from the groin and maneuvered up through the aorta into the heart).
2. Needle biopsy of L1-L2 disc and unsuccessful attempt to biopsy L2 vertebral bone because "vertebral body was so soft, that no core was obtained despite 2 passes with an 11-gauge needle," 9/27/16. (Bone needle biopsies are notoriously painful, and the patient is not under general anesthesia for this).
3. Bronchoscopy 10/12/16. (Semi-rigid tube with camera on the end was placed down his throat into his lungs for viewing all regions and cutting biopsy samples. The patient needs to be awake for this procedure in order to maintain adequate breathing around the tube.).

4. Echocardiograms. (He had multiple ultrasound images of his heart, two of which were viewed "trans-esophageal" via a probe inside of his esophagus to look more closely at the heart.)
5. Needle drainage and drain placement of psoas abscess 11/1/16. (This procedure and the ensuing drainage tube that remains in place for days is consistently uncomfortable.)
6. Central intravenous placement. (He had multiple large-bore long IVs placed into major vessels. This was needed for life-saving resuscitation and long-term intravenous antibiotics. The placement is painful.)
7. Thoracentesis. (This thick tube insertion into the side of his chest between the ribs was done to provide immediate and ongoing drainage of fluid surrounding his lungs. These are notoriously painful.)
8. Intubation. (Breathing tube placed, on the respirator for survival).
9. Feeding tube. (Large bore plastic tube pushed through his nose into his stomach and left there for many days).
10. "Massive transfusion" required - 33 units of blood. (This high volume is indicative of near lethal hemorrhage. Although it saved his life, these transfusions can cause uncomfortable immune reactions, and limit his potential for adequately safely matched blood transfusions if needed for an emergency in the future.
11. Multiple urinary Foley catheter insertions, removals, long term use. (This is a plastic tube inserted through the urethra, up the penis, all the way into the bladder. This allows urine to drain into a plastic bag attached to the other end of the catheter. Insertion is consistently painful, but these are often used during inpatient stays for a few days. Mr. Atcitty, however, had a Foley catheter in place nearly every day from September 2016 to May 2017. This is *universally unacceptable* for patients to wear a Foley catheter for 8 months, unless they have a terminal illness and/or zero other option. It is considered a last resort. Being constantly tethered from the penis to a bag of urine, often strapped to the leg, inhibits mobility, mood, socializing, and healing of the rest of the body. Also, this length of catheter treatment causes malfunctions, infections, and tripping on the catheter - as occurred with his

continuous penile pain and three episodes of bleeding into the urine bag over the 8 months.)

G. *The following additional conditions were subsequent complications to Mr. Atcitty's health:*

1. Immediate and life-threatening:
 - a. Shock (blood pressure dropped to lethal levels, requiring life support and hemodynamic pressor infusions).
 - b. Acute respiratory failure.
 - c. Heart attack (Troponinemia, acute coronary syndrome).
 - d. Acute congestive heart failure.
 - e. Acute kidney failure.
 - f. Bowel obstruction of the small intestine.
 - g. Severe arrhythmia atrial fibrillation, with rapid ventricular response.
 - h. Pleural effusions (fluid surrounding and impinging on his lungs).
 - i. Acute severe low back pain and groin pain.
 - j. Urinary incontinence and retention.
 - k. Acute anemia.
2. Mr. Atcitty's long-term and progression that followed included:
 - a. Chronic congestive heart failure.
 - b. Hypertensive heart disease.
 - c. Chronic renal disease stage 3.
 - d. Arrhythmia, chronic: paroxysmal atrial fibrillation.
 - e. Post-surgical limitations and pain.
 - f. Abnormal weight loss of 104 lbs. Weight at initial presentation 7/6/16 was 332.46 lb. and on 12/5/2016 was 228.6 (pt is 77.95 inches tall)
 - g. Malnutrition, protein calorie, severe.
 - h. Urinary incontinence and urinary retention (urine unable to be released, requiring plastic catheter drainage).
 - i. Anemia of chronic disease.
 - j. Hypokalemia (chronically low potassium electrolyte levels).
 - k. Hypocalcaemia (chronically low calcium electrolyte levels).

- l. Severe chronic back pain.
- m. Decubitus wound, open, back wall of thorax.
- n. Pressure ulcer left buttock.
- o. Weakness, debility, frailty, trouble walking, trouble with fine-motor skills, significant limitations to ADLs.

V. PROGNOSIS

Subsequent to his dire condition and extremely poor prognosis, in December 2016 Mr. Atcitty was discharged from the Montecito Post-Acute Care rehabilitation facility to at-home Hospice Care. This transition of care is only provided and federally reimbursed under the strict guideline that the Hospice doctor validates that the patient is *not expected to survive 6-months*.

Despite phenomenal physical and mental adversity from this systemic infection that ravaged his body, Mr. Atcitty survived. As is expected from the permanent damage endured as a result of this infection and its delayed treatment, he now continues to suffer from:

A. ***Chronic daily refractory musculoskeletal pain:***

1. The 10/25/17 note from KHC notes he has "chronic back pain, intensity 7/10" which is the exact same severe intensity of pain that was reported as a new finding during the second KHC encounter on 7/11/2016 in the emergency department, as detailed in section IV above.
2. The 6/3/18 note from Phoenix Indian Medical Center verifies the x-ray findings of "Hardware in low back [,] severe DJD [Degenerative Joint Disease]" on physical exam signs of "Low Back TTP [Tenderness to palpation] upper lumbar paraspinal bilateral" which has crippled Mr. Atcitty with daily refractory lower back pain.

B. ***Multi-organ system damage:***

He has endured irreversible kidney damage, congestive heart failure, and other organ system problems outlined in detail section V. above, which shorten his lifespan.

C. *Additional poor prognosis specifically related to his heart valve replacement:*

1. The American Academy of Thoracic Surgery establishes, "Infective endocarditis is the most severe and potentially devastating complication of heart valve disease ... Without treatment, infective endocarditis is uniformly fatal. Patients with valve disease, prosthetic valves, history of infective endocarditis... are at increased risk of [developing] infectious endocarditis [again]."
2. A heart valve replacement is not a cure. It is a temporary measure.
3. The younger the patient is when it is placed, the more likely it will fail and require replacement (called a "re-do" or "re-operation" or "repeat valve replacement") one or more times. Mr. Atcitty had this valve replacement at the age of only 59. Standard cardiology categorization ranks this surgical age range, 50 to 65 years, as early or "young" for valve replacement surgery; the younger the patient is at the first valve replacement, the more likely it will fail and require another replacement during his lifetime. Because of his initial young age, he may require repeat valve replacements one or more times, and each re-operation is increasingly risky, technically complex, and life-threatening.
4. The American Heart Association tells patients the bioprosthetic valve will last "10-20" years. These valves age more quickly than the native valves, and the date of re-operation is determined according to how fast the valve deteriorates both functionally and structurally. Therefore, the valve has to be assessed regularly via frequent visits for cardiology consults, cardio-thoracic surgical consults, and echocardiograms.
5. Based on his type of valve replacement there is a *30.9% chance of developing hemodynamic valve deterioration*. Of these patients with valve deterioration requiring re-operation:
 - 12.0% deteriorate "very early" during the first 2-years after the initial valve replacement surgery.
 - 30.1% deteriorate "early" between 2-5 years after surgery.
 - 36.9% deteriorate "midterm" between 5-10 years after surgery.
 - 20.8% deteriorate "long-term" more than 10 years after surgery.

- In addition, diabetes mellitus and chronic kidney disease independently increase the risk of hemodynamic valve deterioration within the first 5 years.
6. Deterioration of the valve can occur via multiple mechanisms, but if the initial reason for the valve replacement was endocarditis (infection of inner heart and valves), then there is a significant risk of that the patient developing endocarditis *again* on their bioprosthetic valve: this conveys an even poorer prognosis for re-operation, compared to the otherwise wear-and-tear deterioration of the bioprosthetic valve.
 7. If and when necessary, *the re-operation on the valve is dangerous*.
 - The 30-day-mortality after re-operation of an aortic valve replacement is 7.1%.
 - (If the cause of the re-operation is due to endocarditis of the bioprosthetic valve, the hospital-stay-mortality is 15.3%.)
 - *Survival after the re-operation is 63% at 5 years and only 34% at 10 years.*
 8. Life-threatening complications from the first valve replacement (as well as future ones) include valve malfunction, blood clots, major bleeding, stroke, hemolytic anemia, and endocarditis, among others, including death.
 9. Overall, the 15-year-mortality for his heart valve is 36.1% (according to New England Journal of Medicine) to 39.4% (according to Journal of the American Medical Association) to 50% (according to the European Heart Journal), based on (1) his age when the valve was placed, (2) the particular valve that was damaged (aortic valve), and (3) his type of new valve (bio-prosthetic).
 10. Longevity of his current bioprosthetic valve, his current prognosis, and his prognosis if he requires re-operation on the valve are all independently exacerbated by his co-morbidities: i.e., his new chronic congestive heart failure, his new chronic kidney disease, his new atrial fibrillation heart disease, his new chronic musculoskeletal pain, his new immobility and difficulty with cardiopulmonary exercise, his new anemia of chronic disease, and his new electrolyte fluctuations, as well as his diabetes.

D. *Additional poor prognosis specifically related to his extensive spine surgeries:*

1. His spinal surgery operative note on 10/10/16 (p. 290 of 480) states, "complete destruction of L1 and L2 vertebral bodies unstable with some subluxation. Unfortunately, the patient had significant medical issues that had to be addressed prior to him undergoing surgery." This is why he had multiple *extensive* spinal operations, noted in IV. E. above, including a massive spinal fusion of *six vertebrae* (T11 through L4).
2. Unfortunately, even though the patient survived these surgeries, there are multiple potential late complications including but not limited to severe life-long chronic pain, adjacent segment degeneration, symptomatic hardware, vertebral compression fractures, late deep infection, and instrumentation failure requiring revision. Repeating surgery for him in the future due to these complications would be dangerous with poor prognosis, due to his extensive primary damage from the infection, scarring from the previous surgeries, aging bioprosthetic heart valve, and multi-organ system damage from the systematic infection.

E. *Reduced function of physical ability and reduced function of organs:*

Consistent with this grave prognosis, the physical exam note from 7/11/17 follow-up visit at KHC indicates the following.

1. "Diminished hand grip strength, diminished fine motor skills. ... states he is [sic; has] not seen too much improvement regarding his moor [sic; motor] skills, back pain/movility [sic; mobility]".
2. "Irregular rate and rhythm ... Systolic murmur to all four foci." Patient reports that he was told after this exam that he had "Three additional heart murmurs." This objective finding and the patient's recount of the doctor's report are alarming. Heart murmurs audible from every region of the chest is ominous.

VI. CONCLUSION

Mr. Atcitty was in his usual functional state of health and employment until he developed severe back pain in July 2016, and he repeatedly sought medical help from KHC over four visits (7/6/16, 7/11/16, 8/1/16, 9/6/16).

As described more fully above, the KHC negligently failed to provide medical care in accord with national standards for medical care (which are also the requisite standards in Arizona and the Navajo Nation) by the following errors, among other things:

- Repeated failures to fully investigate Mr. Atcitty's complaints.
- Repeated failures to adequately document their assessment of Mr. Atcitty's condition.
- Repeated failures to complete the evaluation.
- Repeated failures to make an accurate assessment of patient's medical state.
- Repeated failure to provide adequate treatment.
- Inappropriate disposition leading to exacerbation of underlying condition.
- Multiple delays in forming the ultimate correct diagnosis, including a disturbing misdiagnosis of metastasized prostate cancer.
- Subsequent prolonged delay in treatment, leading to progressive permanent damage to multiple organ systems.

As discussed more fully above, Mr. Atcitty suffered the consequences of the repeated failures to provide medical care in accordance with recognized standards, including but not limited to:

- Life threatening disease
- Preventable complications
- Injuries
- Unnecessary procedures
- Acute and chronic pain
- Physical, mental, and emotional trauma
- Permanent disability

Each of the following items above is a direct result of the KHC providers' failure to promptly and properly diagnose and treat his medical conditions when he came to KHC for medical assistance.

As a result of KHC failures and delays, Mr. Atcitty's diagnosis of infection was delayed 80 days, allowing this systemic lethal infection to spread and obliterate part of his spine, heart, and other organs, ultimately invading his entire body. Appropriate early diagnosis of the initial localized infection with an appropriately targeted antibiotic course of therapy would have prevented the spread of the infection, the extension of the infection to other body parts, the life-threatening complication of sepsis, the need for multiple surgeries, suffering, and the long term damage. Instead of diagnosing and treating a localized infection. Mr. Atcitty almost died multiple times and suffered major lasting organ damage. Because of these permanent injuries, Mr. Atcitty's long-term prognosis is grave.

Mr. Atcitty suffers long-term permanent injury, organ damage, and chronic pain, including but not limited to: difficulty walking, difficulty standing for extended periods of time, trouble sleeping, severely reduced bodily function, reduced fine motor skills, refractory back pain, neurologic debility, physical and post-traumatic suffering, and significantly reduced life expectancy due to his heart damage. In addition, the longevity of his heart valve replacement is limited, with deterioration of the valve expedited by the other organ injuries incurred since the infection: chronic heart failure, heart arrhythmia, and chronic kidney disease among others. In addition to ultimately needing another replacement of his bioprosthetic heart valve, Mr. Atcitty is also at high risk of ultimately needing surgical repair or revision of his extensive spinal reconstruction and fusion, as explained in section V. D above. This neurosurgery on the spine would be a highly complicated and risky surgery, given the extent of original damage, the scarring from the infection and subsequent surgery, and the multi-organ system complications acquired from this systemic infection.

As a result of the failure of the KHC providers to timely and properly diagnose and treat his medical conditions, Mr. Atcitty has permanent limitation of his overall health, organ function, physical mobility, life fulfillment, resilience, employability, and longevity.

VII. RESOURCES

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